

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET E18EU	TCDS NUMBER E18EU REVISION: 4* DATE: 11/20/92 WYTWORNIA SPRZETU KOMUNIKACYJNEGO (WSK) "PZL-RZESZOW" MODELS: PZL-3S PZL-3S 2ND SERIES PZL-3SR
---	--

Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E18EU) and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations, provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

TYPE CERTIFICATE (TC) HOLDER Wytwornia Sprzetu Komunikacyjnego "PZL-RZESZOW"
ul. Obroncow Stalingradu 120
35-078 Rzeszow
Poland

I. MODELS	PZL-3S	PZL-3S 2ND SERIES	PZL-3SR
TYPE	For PZL-3S / PZL-3S 2nd Series: 7RA, single-speed supercharger. Direct propeller drive with counter-clockwise rotation (viewed from rear). For PZL-3SR: Propeller drive by reduction gear at ratio of 0.7 with counter-clockwise rotation (viewed from rear).		
RATINGS (SEE NOTE 6)			
Maximum continuous hp, r.p.m., in. Hg., pressure altitude	542-2100-35.8-S.L.	--	--
Takeoff (5 min.) hp, r.p.m., in. Hg., pressure altitude	592-2200-37.0-S.L.	--	--
FUEL (SEE NOTE 2)	91 octane rating. Carburetor PZL-UNION model AK-26A float type, with automatic manifold pressure and altitude correction. Fuel pump PZL-UNION model 702M.		
Minimum grade aviation gasoline	Aero shell 100 acc. to MIL-L-6082 / Aero shell 100W acc. to MIL-L-22851 / Usable quantity (N.A. - dry oil sump)		
OIL TYPE	Two MWL-7A magnetos / Timing 25 degrees BTC / Fourteen spark plugs SD-48BSM or REB-37E or equivalent		
IGNITION			
COMPRESSION			
Bore and stroke, in.	6.122 x 6.115	--	--
Displacement, cu. in.	1260	--	--
Compression ratio	6.4:1	--	--
Supercharger-centrifugal, single speed, crankshaft driven at ratio of	7.131:1	--	--

★

PAGE	1	2	3	4	5
REV.	4	4	4	4	4

LEGEND: "--" INDICATES "SAME AS PRECEDING MODEL"

NOTICE: ALL PAGES ARE REFORMATTED. SIGNIFICANT CHANGES, IF ANY
ARE BLACK-LINED IN THE LEFT MARGIN.

I. MODELS (Continued)	PZL-3S	PZL-3S 2ND SERIES	PZL-3SR
PRINCIPAL DIMENSIONS (in)			
LENGTH	43.720	--	49.448
WIDTH	49.881	--	--
WEIGHT (lb/kg)			
DRY (starter, piston compressor, & alternator not included)	906/411	--	983/446
CENTER OF GRAVITY			
AXIAL Forward of engine frame mounting plane	6.575	--	7.598
LATERAL To left of engine centerline (viewed from rear)	0.630	--	0.079
VERTICAL Below engine centerline	0.473	--	0.039
PROPELLER SHAFT	For PZL-3S and PZL-3S 2nd Series: Flange type to Drawing No. 20.44.0002 For PZL-3SR: Flange type to Drawing No. 20.64.0643		
CRANKSHAFT DAMPERS (SEE NOTES 1-8)	For all models: One pendulum type, 3.5 order, rear arm of the crankshaft For PZL-3S: Two roller type, 4.5 and 7 order, front arm of the crankshaft For PZL-3S 2nd Series: One pendulum type, 3.5 order, front arm of the crankshaft For PZL-3SR: One pendulum type, 2.5 order, front arm of the crank shaft		

CERTIFICATION BASIS

FAR 21.29 and FAR 33, effective March 1, 1965, as amended by 33-1 to 33-5, for PZL-3S.
 FAR 21.29 and FAR 33, effective March 1, 1965, as amended by 33-1 to 33-6, for PZL-3S 2nd Series and PZL-3SR.

Type Certificate E18EU issued/revised

MODEL	DATE OF APPLICATION	DATE TC ISSUED OR REVISED
PZL-3S	12/23/76	5/27/77
PZL-3S 2ND SERIES	-	12/10/86
PZL-3SR	-	12/10/86

IMPORT REQUIREMENTS

To be considered for installation on United States registered aircraft, each engine (or propeller) to be exported to the United States shall be accompanied by a certificate of airworthiness for export, or certifying statement endorsed by the exporting cognizant civil airworthiness authority, which contains the following language:

- (1) This engine (or propeller) conforms to its United States type design (Type Certificate Number E18EU) and is in a condition for safe operation.
- (2) This engine (or propeller) has been subjected by the manufacturer to a final operational check and is in a proper state of airworthiness.

Reference FAR Section 21.500, which provides for the airworthiness acceptance of aircraft engines or propellers manufactured outside of the United States for which a United States type certificate has been issued.

Additional guidance is contained in FAA Advisory Circular 21-23, Airworthiness Certification of Civil Aircraft, Engines, Propellers, and Related Products, imported into the United States.

NOTES

NOTE 1.

Maximum temperature limits: \emptyset F (\emptyset C)

Oil inlet

(bayonet resistor type
thermometer)
185 (85) No time limit

Cylinder head

(gasket type thermocouple)
464 (240) Max. 15 min
446 (230) No time limit

Cylinder base

302 (150) No
time limit

NOTE 2.

Fuel and oil pressure limits

	<u>Max</u>	<u>Min</u>
Fuel Pressure (psi)		
at rated range	4.25	2.0
at idle	--	1.5
Fuel inlet pressure for gravity fuel system at all ranges	--	1.0
Oil pressure		
at rated range	100	77
at idle	--	28.5

NOTE 3.

Accessory Drive or Mounting Provisions:

Accessory	Rotation (Facing Drive Pad)	Speed Ratio to Engine	Maximum Torque in. lb. (kGm)		Maximum Overhang Moment in. lb. (kGm)
			Continuous	Static	
Starter (756-21 CGM)	C	1.208:1	2170(25.00)	7812(90.00)	87(1.00)
Magnetos (MWL-7A)	C	1.75:1	4.3(0.05)	13(0.15)	35(0.40)
Piston Compressor (AK-50M or AK-50P-12K)	C	1:1	104(1.20)	312(3.60)	17(0.20)
Fuel Pump (702M)	C	1:1	2(0.02)	6(0.6)	9(0.10)
Tachometer (TE-45)	CC	0.5:1	17(0.20)	52(0.60)	9(0.10)
Propeller Governor for PZL-3S (0719-812-008P)	C	1.048:1	17(0.20)	52(0.60)	10(0.12)
Propeller Governor for PZL-3SR (0719-812-008L)	CC	1.1027:1	17(0.20)	52(0.60)	10.6(0.122)
Oil Delivery Pump (gear type, integral)	C	1:1	17(0.20)	52(0.60)	-
Oil Scavenger Pump (gear type, outside)	CC	1.25:1	0.87(0.01)	2.6(0.03)	2.6(0.03)
Alternator for Engine with Layshaft (JASCO 7555-1)	C	2:1	260(3.00)	954(11.0)	122(1.40)
Auxiliary Access. Layshaft (a) Alternator ANG Series 6400	CC	2.3:1	260(3.00)	954(11.0)	122(1.40)
(b) Rear Center Drive (See NOTE 4)	C	1:1			

- NOTE 4. Rear center drive of auxiliary accessory layshaft may be utilized only with prior authorization of PZL-RZESZOW for the particular accessory desired to be used.
- NOTE 5. Engine rating basis:

Ratings are based on static sea level standard conditions of dry inlet air at 59 degrees F (15 degrees C) and 29.92 in. (760 mm) Hg., with no aircraft accessory drive loads. Production engines conforming with this Type Certificate must be capable of producing not less than 100 percent rated power at rated r.p.m. and manifold pressure.
- NOTE 6. Alternate engine ratings are approved as follows:

Maximum continuous hp, r.p.m., in Hg., Pressure Altitude 542-2050-36.2-S.L.
- NOTE 7. Time between Overhaul (TBO) or eventual parts life limits, if any, are and will be provided in Engine Log Book and appropriate Bulletins in agreement with FAA. Until approved engine overhaul manuals are published, only the engine manufacturer is permitted to perform engine overhauls.
- NOTE 8. PZL-3S, PZL-3S 2nd Series and PZL-3SR engines may be equipped with connections for aircraft installation and ignition manifold connections in metric or English unit system. Engines equipped with English unit connections, changed tachometer drive and V-belt driven alternator are designated with letter C after serial number. Engines with V-belt driven alternator are designated with letter D after serial number to distinguish them from engines equipped with lay-shaft for splined alternator drive. PZL-3S 2nd Series engines are equipped with crankshaft with changed vibration damping system. PZL-3SR engine is variation of PZL-3S engine equipped with planetary gear having ratio 0.7:1 reducing propeller shaft r.p.m. in relation to the crankshaft r.p.m.
- NOTE 9. Service Bulletins, structural repair manuals, vendor manuals, aircraft flight manuals, and overhaul and maintenance manuals, which contain a statement that the document is General Directorate of Civil Aviation (GDCA) approved, are accepted by the FAA and are considered FAA approved. These approvals pertain to the type design only.

---THE END---